

549, 928

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



Rec'd PCT/PTO 20 SEP 2005



(43) International Publication Date  
30 September 2004 (30.09.2004)

PCT

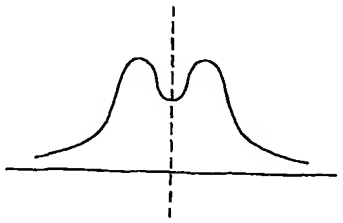
10/549928  
(10) International Publication Number  
WO 2004/083133 A2

- (51) International Patent Classification<sup>7</sup>: C03B [KR/KR]; 205, 275-1 Gugal-ri, Kiheung-eup, Yongin-shi, Kyunggi-do 449-903 (KR).
- (21) International Application Number: PCT/KR2004/000592 (74) Agent: HWANG, E-Nam; 507, New Seoul Bldg., 828-8 Yoksam-dong, Kangnam-gu, Seoul 135-080 (KR).
- (22) International Filing Date: 18 March 2004 (18.03.2004) (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
10-2003-0017901 21 March 2003 (21.03.2003) KR  
10-2003-0017902 21 March 2003 (21.03.2003) KR  
10-2003-0078797 7 November 2003 (07.11.2003) KR
- (71) Applicant (for all designated States except US): RORZE SYSTEMS CORPORATION [KR/KR]; 720, Korim-dong, Yongin-shi, Kyunggi-do 449-923 (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): YOU, Ki-Yong [KR/KR]; 109-1504, Dongsuwon LG Village, 686 Mangpo-dong, Paldal-gu, Suwon-shi, Kyunggi-do 442-706 (KR). KIM, Choon-Taek [KR/KR]; 1/305, Poonglim Apt, 498 Wooman 1-dong, Paldal-gu, Suwon-shi, Kyunggi-do 442-819 (KR). AN, Min-Young [KR/KR]; 605-1205, Samcheonjugong Apt., Samcheondong 1-ga, Wansan-gu, Jeonju-shi, Jeonrabuk-do 560-784 (KR). KIM, Mj-Jee
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 2004/083133 A2

(54) Title: APPARATUS FOR CUTTING GLASS PLATE



(57) Abstract: Disclosed herein is an apparatus for cutting a glass plate. The apparatus comprises a cracking means for forming a minute crack at a point on the glass plate where the cutting is started, at least one scribing means using a laser beam absorbed by the glass plate, at least one quenching means using a quenching fluid after irradiation of the laser beam, a breaking means using the laser beam. The breaking means comprises a laser oscillator, a reflection mirror and a focusing lens. The focusing lens has at least two or more focal lengths. The apparatus may further comprise a photo mask formed with light transmission openings for transmitting a part of the laser beam to be irradiated on the glass plate instead of the focusing lens. With the apparatus of the present invention, the problems caused by the conventional lens, such as a reduced straightness of a cutting line or a rough cutting plane, can be prevented, thereby providing a clean cutting plane.